

REMARKS

This is a complete response to the outstanding Office Action mailed on November 16, 2010. Applicant respectfully requests reconsideration. Claims 29-32 were previously pending in this application. Claims 15-28 and 33-38 have been previously withdrawn from further consideration. Claims 29 and 31 have been amended. As a result, claims 29-32 are pending for examination with claim 29 being an independent claim. No new matter has been added.

35 USC §112

The Examiner has rejected Claims 29-32 under 35 USC §112, second paragraph, as being indefinite for failure to point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, claim 29 recites "allow fluid to be drawn...to be entrained". The Examiner asserts that the limiting effect of the recitation is unclear, specifically the limiting effect of "drawn" is unclear. The Examiner states that it is unclear whether the use of the word is intended to include a variety of means for supplying the fluid, such as injecting or supplying pressurized fluids or whether the fluid is intended to

be limited to a fluid source at atmospheric pressure or less.

Applicant asserts that the use of the term "drawn" is not intended to limit the claim to any particular means for supplying the fluid, such as supplying pressurized fluids, nor is it intended to limit the fluid source to one that is at atmospheric pressure or less.

Applicant respectfully requests that the Examiner review the claim on its merits. Although Applicant states in paragraph [0014] that it is preferred that the pressure of the fluid entering the capillaries through the needles is substantially equal to the pressure of the environment into which the extrudate product is being extruded, this is not a limitation present in claim 29. Additionally, paragraph [0014] states that it is preferred that the flow of extrudable material entrains the fluid in the capillary, which is clearly a limitation of claim 29. Claim 29 recites "using the needles allow fluid to be drawn from the fluid source through the conduit to be entrained in the extrudate product". The use of the term entrained clearly limits the claim.

Although it is contemplated in the specification at paragraph [0014] that the fluid may enter the capillaries at above or below

the pressure of the environment into which the extrudate product is being extruded, this is clearly not what Applicant claims. The Examiner states that the limiting effect of "entrained" is unclear in view of paragraph [0014]. As defined in attached Exhibit A, "to entrain" means to "drag along; [of fluid] carry (particles etc) along in its flow". The term is used in the claims to distinguish the claimed method in which fluid is drawn from the fluid source through each of the needles by the advancing extrudable material to be entrained in the extrudate product to form capillaries. This method is different from methods in which fluid is injected under positive pressure. Applicant asserts that the wording of claim 29 is clear, particularly when read in light of the specification, and that no further claim amendment is necessary. Applicant respectfully requests reconsideration and withdrawal of the 112 rejection.

Additionally, the Examiner objects to claim 31, which recites "laminating two or more films together" and determines that it is unclear how the recitation complements, supplements or is integrated with the scope of claim 29. For example, the Examiner states that it is unclear whether something formed in claim 29 is laminated to two or more films or whether claim 31 is

substantially disconnected from the process of claim 29.

Applicant has amended claim 31 to recite "A method of making a laminated extruded product comprising forming first and second extrudate film products, wherein each first and second extrudate film product is formed according to the method of claim 29, and laminating said extrudate film products together". As such, Applicant asserts that it is clear that the method of forming the first and second extrudate film products utilizes the method claimed in 29 and the method claimed in claim 31 further limits the extrudate product by making a laminated extruded product. Applicant respectfully requests reconsideration and withdrawal of the 112 rejection.

35 USC 102(b)

The Examiner has rejected claim 29 under 35 USC 102(b) as being anticipated by Zertuche (US Patent No. 4,655,987, hereinafter "Zertuche"). Applicant respectfully submits that Zertuche fails to disclose, teach, or suggest all of the elements of claim 29 for at least the reasons that follow.

Zertuche discloses the continuous extrusion of "one-piece tubular articles having inner cell-like divisions", see col. 1

lines 30-32. Zertuche further explains at col. 2 lines 40-44 that "Die 23 closes on said nozzle at 24 to force the fluid material 25 into entering recesses or passages 14, all of which are interconnected to actually form one single variously-shaped or composite recess which shapes the advancing material 25 to the final extruded form" (emphasis added). Zertuche goes on to explain, at col. 2 lines 44-47 "When the already shaped material goes out the nozzle and die (FIG. 3 or 5), air flowing out of conduits 20 provides any air pressure and/or temperature desired for the extruded material". Thus, the conduits in Zertuche are formed by shaping the extrudate around the elements 16 of the multipartitioned core. It is these elements that determine the size and shape of the conduits. The ultimate cavity shape and size, therefore, depends on the geometry of the die inclusions 16. The air from conduits 20 serves only to prevent collapse of the walls of the conduits or to maintain them at a desired temperature.

In contrast, Applicant claims "using the needles allow fluid to be drawn from the fluid source through the conduit to be entrained in the extrudate product to form capillaries such that the extrudate includes capillaries therealong in the predetermined

pattern". Applicant claims a method of making extruded materials which include a plurality of capillaries therealong using fluid entrained via needles.

The use of the term "capillaries" is not synonymous with "cavity" or "chamber" or "conduit", which may have very large widths. As defined in Exhibit B, "capillary" means "hairlike...of a tube etc, having a hairlike bore". The function of the needles in the present claimed invention is to provide a local source of fluid suitable for forming capillary channels by entrainment during the extrusion process.

Additionally, Applicant claims "wherein a size of the outlet end of the plurality of needles does not define the size or shape of the resulting capillaries". As claimed by Applicant, the size and shape of the needles does not define the shape of the resulting capillary channels, which are formed by the action of the entrained fluid. See for example paragraph 0013 final sentence "For instance, with a needle outlet size of 0.3 mm capillary bores of between 200 microns and 20 microns can readily be produced depending on the processing conditions."

Thus, the bore or capillary size can be substantially smaller

than the needle outlet size. In contrast to the present invention, all of the cited prior art methods use a former or mandrel to make open channels within an extruded material. The shape and size of the channels is determined by the shape of the mandrel about which they are formed. Thus, Applicant asserts that the present invention is neither disclosed nor suggested by Zertuche.

The Examiner has rejected claim 29 under 35 USC 102(b) as being anticipated by Delves-Broughton (US Patent No. 3,771,934, hereinafter "Delves-Broughton"). Applicant respectfully submits that Delves-Broughton also fails to disclose, teach, or suggest all of the elements of claim 29 for at least the reasons that follow.

Delves-Broughton is similar to Zertuche in that it is the tubular members 20 about which passageways are formed in an extrudate. See, for example, col. 3 lines 30-33: "Tubular members as 20 emerge from the conical nose of the core and these give rise during extrusion to the air passageways in the dielectric." The ultimate cavity shape and size, therefore, depends on the geometry of the tubular members 20. As with Zertuche, a vent tube is used

to equalize pressure; see, for example, col. 2 lines 59-62: "By this means the air pressure in the passageways formed by the segments is equalized to the pressure of the atmosphere."

Accordingly, the shape of the cavity is determined by the shape of the tubular members about which they are formed. Thus, Applicant asserts that the present invention is neither disclosed nor suggested or made obvious by Delves-Broughton alone or in combination with Zertuche.

The Examiner has rejected claim 29 under 35 USC 102(b) as being anticipated by Ho et al. (US Patent No. 5,658,644, hereinafter "Ho") or in the alternative, the Examiner has rejected claim 29 under 35 USC 103(a) as being unpatentable over Ho. Applicant respectfully traverses these rejections. As in Zertuche and Delves-Broughton, Ho also makes passages using mandrels 16, and it is clear from the drawings (see Figures 4 and 5) that the resulting passages have the same shape as the mandrels that formed them. Bores 17 in the mandrels provide air flow to prevent cavity collapse.

The Examiner has rejected claim 29 under 35 USC 102(b) as being anticipated by Woolley (US Patent No. 3,778,495, hereinafter

"Woolley") or in the alternative, the Examiner has rejected claim 29 under 35 USC 103(a) as being unpatentable over Woolley.

Applicant respectfully traverses these rejections. As with the other cited art, Woolley also uses mandrels to form passageways in an extrudate. For example at col. 7 lines 60-64: "All mandrels are preferably hollow to permit air ... to be supplied (at a pressure of not over 1 or 2 lbs gauge) to the channels being formed in the extruded plastic indicated at 31 (FIG. 7)." As with the previously-discussed art, the passageways are formed by exclusion of material flowing in the die by a piece of the die (the mandrel), rather than by inclusion of a second, fluid, phase that ultimately forms the cavity. As will be clear from the shapes of the channels in the products shown in Figures 3 and 13 of Woolley, the channels take on the shape of the mandrels around which they are formed. Moreover, Woolley does not contemplate providing air at atmospheric pressure, as claimed by Applicant "using the needles to allow fluid to be drawn from the fluid source through the conduit to be entrained". The wording of the quoted pressure range in Woolley strongly implies that the air is injected, not entrained as in the present invention, the distinction between which is discussed above. It would not have

been obvious to a person of ordinary skill in the art to modify Woolley to use atmospheric pressure. If a fluid is supplied at the atmospheric pressure to the inlet to the mandrel, and the exit of the extrudate is also at atmospheric pressure, it would be easy to think that there would be no driving force to make air enter "naturally". Therefore it is logical to pressurize the inlet air to a pressure slightly above atmospheric to force an air flow. Woolley discloses use of mandrels to form channels, and also teaches away from the present invention by specifying provision of pressurized air.

As such, Applicant asserts that the cited prior art, alone and in combination, fail to teach claim or suggest Applicant's claims. Specifically, none of the prior art discloses "allowing fluid to be drawn from the fluid source through the conduit to be entrained in the extrudate product to form capillaries such that the extrudate includes capillaries therealong in the predetermined pattern". Rather, each prior art reference uses mandrels to form passages by excluding extrudate in regions corresponding to the mandrels. Moreover, none of the prior art even hints at the present invention and would not motivate a person of ordinary skill in the art to arrive at the claimed subject matter.

Applicant respectfully requests reconsideration and withdrawal of the 102 and 103 rejections directed at claim 29.

The Applicant also respectfully submits that since claims 30-31 depend on independent claim 29, claims 30-31 contain all limitations of independent claim 29. Since independent claim 29 should be allowable, as argued herein, pending dependent claims 30-31 should be allowed as a matter of law for at least this reason. In re Fine, 5 U.S.P.Q.2d 1596, 1608 (Fed. Cir. 1988).

Prior Art Made of Record

The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

In re: Malcolm R. Mackley
Filed: May 3, 2007
Serial No.: 10/582,465
Page 21

CONCLUSION


A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account Number 02-3285, under Docket Number DUMMETT-051XX.

In re: Malcolm R. Mackley
Filed: May 3, 2007
Serial No.: 10/582,465
Page 22

Respectfully submitted,

Malcolm R. Mackley

By 
Daniel J. Bourque, Esquire
Registration No. 35,457
Attorney for Applicant(s)

BOURQUE & ASSOCIATES, P.A.
835 Hanover Street, Suite 301
Manchester, New Hampshire 03104

Telephone: (603) 623-5111
Facsimile: (603) 624-1432

Date: 3-16-11